REMARKS

Applicants have considered the outstanding official action and respectfully submit that the claims are directed to patentable subject matter as set forth below.

The amendments to the specification are to insert the publication numbers for described European applications.

The outstanding rejections are as follows:

(1) Claims 3-8, 14 and 22 under 35 U.S.C. §103(a) over EP 0 875 889 A1 (Daems) in view of U.S. Patent No. 5,994,530 (Posey-Dowty);

(2) Claims 3-9, 14, 21 and 22 under 35 U.S.C. §103(a) over U.S. Patent No. 6,187,508 (Andriessen) in view of Posey-Dowty;

(3) Claims 11-12 under 35 U.S.C. §103(a) over Andriessen or Daems in view of Posey-Dowty as applied above and further in view of U.S. Patent No. 4,405,706 (Takahashi);

(4) Claim 20 under 35 U.S.C. §103(a) over Andriessen or Daems in view of Posey-Dowty as applied above and further in view of applicants' admission of record, i.e., that N-quaternized cellulose compounds per se are commercially available; and

(5) Claim 24 under 35 U.S.C. §103(a) over Andriessen or Daems in view of Posey-Dowty as applied above.

Claim 3 is the sole pending independent claim.

The primary references applied alternatively in each rejection is Andriessen and Daems. Applicants note that Andriessen is not available as a reference under 35 U.S.C. §103(c) since each of Andriessen and the captioned application are commonly owned by Agfa-Gevaert as shown in the recordal at Reel 011225 and Frame 0088 for U.S. Patent No. 6,187,508 and in the attached copy of the assignment for the captioned application. If necessary to place the application in condition for allowance, the assignee agrees to file a terminal disclaimer in the captioned application with respect to the '508 patent. Accordingly, rejection (2) above is moot since Posey-Dowty is insufficient alone as evident from the Examiner basing the rejection on a combination of references, and the sole applied primary reference in the remaining rejections is now Daems.

With respect to the claimed invention, an essential element is the inclusion of a N-quaternized cellulose as a binder. Daems does not teach the claimed cellulose as acknowledged by the Examiner. The Examiner relies on Posey-Dowty for the teaching of the claimed N-quaternized cellulose based on the disclosure therein of (1) certain carboxymethyl cellulose (CMC) esters that are useful as a wetting agent and in certain high solids coatings and (2) that such CMC esters can be treated with ammonia or an

amine. Applicants previously noted that the treatment with ammonia or an amine as taught in Posey-Dowty does not provide an N-quaternized cellulose as claimed since N-quaternized celluloses have positively charged nitrogen atoms with 4 covalent bonds built into the polymer structure. In the outstanding official action the Examiner responds by asserting that there is no support in the specification for limiting N-quaternized celluloses to such structure and that the prior art in U.S. Patent No. 4,617,835 at column 4, lines 9+ recognizes preparation of N-quaternized CMC from mixing and reacting a solution of CMC with an appropriate quaternary ammonium solution. Applicants respectfully submit that (1) one skilled in the art would understand that an N-quaternized cellulose has a positively charged nitrogen with 4 covalent bonds due to the structure of the named chemical and as further supported by the examples in the specification, and (2) reaction of a quaternary ammonium compound with CMC is not the same as the treating of a CMC ester with an amine or ammonia as taught in Posey-Dowty.

More specifically as to the structure of the claimed N-quaternized cellulose, the prefix "N-" indicates that the radical is attached to a nitrogen atom (see attached page 444 of Hackh's Chemical Dictionary, 4th Edition, 1969). The group of compounds derived from ammonia

by substituting radicals for attached hydrogens are as follows: primary substitution (H_2NR) are amines, secondary substitution (RHNR) are imines, tertiary substitution (R_2NR) are nitriles, and quaternary substitution (R_4NOH) are ammonium. Quaternary amines are tetraalkyl ammonium bases or compounds derived from ammonium hydroxide containing four radicals (see attached page 35, Hackh's Chemical Dictionary, supra). Thus, the claimed "N-quaternized cellulose" is clearly a positively charged nitrogen with 4 covalent bonds. This is further supported by the preferred N-quaternized celluloses disclosed in the specification at page 6, lines 28-32 and page 8, lines 12-20, e.g. the cellulose, 2-hydroxyethylether, polymer with N,N-dimethyl-N-2-propenyl-2-propenyl-2-propen-1-aminium chloride (CA Registry No. 92183-41-0). Thus, the cellulose contains at least one primary, secondary or tertiary amino group which has been reacted with a substituted or unsubstituted alkyl or substituted or unsubstituted aryl halide, whose substituted or unsubstituted alkyl or substituted or unsubstituted aryl group becomes covalently bonded to the at least one primary, secondary or tertiary amino group resulting in the nitrogen atom of the at least one amino group becoming positively charged, this positive charge being compensated by the halide ion.

Posey-Dowty does not provide any teaching or suggestion as to a N-quaternized cellulose binder but rather teaches CMC esters. Such structure is not disclosed as including N-quaternized cellulose. The description in Posey-Dowty of treating the CMC ester with an amine or ammonia is to disperse the CMC ester in a waterborne formulation (see column 3, lines 56-58; column 7, line 66-column 8, line 17; column 8, lines 29-37; and column 8, lines 59-63). Thus, the treatment with an amine or ammonia is for neutralization to provide a dispersion of the CMC ester. Accordingly, applicants submit that the Examiner is reading into the disclosure of Posey-Dowty through hindsight rather than considering the disclosure as a whole. The teaching of U.S. Patent No. 4,617,385 (noted by the Examiner but not formally applied) does not add to this teaching since there is no teaching or suggestion of reacting a CMC ester with a quaternary ammonium salt in Posey-Dowty.

Accordingly, neither of Daems nor Posey-Dowty teach or suggest the claimed N-quaternized cellulose binder. Thus, the §103 rejections of claims 3-8, 14, 22 and 24 over Daems and Posey-Dowty are respectfully requested to be withdrawn.

Takahashi is relied on solely with regard to the added limitations present in claims 11 and 12. Takahashi does not make up for the shortcomings of Daems or Posey-

Dowty. Takahashi contains no teaching or suggestion as to N-quaternized cellulose. Accordingly, withdrawal of the §103 rejection based on Daems, Posey-Dowty and Takahashi is respectfully requested.

Applicants admission of record that N-quaternized cellulose compounds per se are commercially available, as applied in combination with Daems and Posey-Dowty against dependent claim 20, also does not make up for the shortcomings of Posey-Dowty. It is recognized that inventions often are composed of known or old components but that the combination including such are novel. Thus, as the Court of Appeals for the Federal Circuit stated in In re Rouffet, 47 USPQ2d 1453 (Fed. Cir. 1998):

> "As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics. Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570. 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

> To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed."

In the present instance, applicants' invention is not the N-quaternized cellulose compound per se but the combination of such compound in an aqueous composition additionally including defined particles in a dispersion, wherein the composition is coated on a metal layer present in a sheet or web material. Accordingly, withdrawal of the rejection of claim 20 is respectfully requested.

In summary, applicants submit that it is clear that the burden of establishing a prima facia case of obviousness requires a showing of some objective teaching in the prior art or from knowledge generally available to one of ordinary skill in the art that would lead that individual to combine the relevant teachings of the references. Ex parte Levengood, 28 USPQ 2d 1300, 1302 (BPAI 1993). The Board went on to further state that accordingly, an Examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the

patent applicant has done. Ex parte Levengood, supra, at 1302. It is now well settled that a rejection under 35 U.S.C. §103 must rest on a firm factual basis and that the Examiner has the initial duty of providing that factual basis. Deficiencies in the factual basis cannot be supplied by resorting to speculation or unsupported generalities. In re Warner, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967) and In re Freed, 425 F.2d 785, 165 USPQ 570 (CCPA 1970).

Further, the mere fact that the prior art can be modified does not make the modification obvious unless the prior art suggests the desirability of the modification. In re Gordon, 733 F.2d 900, 902; 221 USPQ 1125 (Fed. Cir. 1984). Once applicants' solution to a problem is disclosed, it is easy to see how prior references can be modified and manipulated to produce the claimed invention. The change can appear simple and by hindsight seem obvious. However, as stated by the Court in In re Sporck, 133 USPQ 360, 363 (CCPA 1962), the simplicity of new inventions is oftentimes the very thing that is not obvious before they are made. In finding obviousness of the claimed invention over a combination of references, or over a single reference, a reason must appear in the prior art for making the combination or for selecting the different features of a single reference. The court in In re Newell, 13 USPQ 2d 1248 (Fed. Cir. 1989), at page 1250, stated –

> "It is well established that in deciding that a novel combination would have been obvious, there must be supporting teaching in the prior art. 'That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.' In re Spormann, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966)."

Thus, applicants submit that the claimed invention is not rendered obvious within the meaning of §103 over the various combinations of references as set forth above.

Reconsideration and allowance are respectfully requested.

Respectfully submitted,

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Attachments - Assignment (Copy)
- Hackh's Chemical Dictionary, 4th Edition, Pages 35 and 444

HACKH'S
CHEMICAL DICTIONARY

[*American and British Usage*]

Containing the Words Generally Used in Chemistry, and Many of the Terms Used in the Related Sciences of Physics, Astrophysics, Mineralogy, Pharmacy, Agriculture, Biology, Medicine, Engineering, etc.

Based on Recent Chemical Literature

FOURTH EDITION

Completely Revised and Edited by

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—COOH → —$CONH_2$; or from ammonia by the replacement of H by an acyl group: NH_3 → NH_2·OCR. (2) Ammonobases. Compounds in which H of NH_3 is replaced by a metal; as, sodamide, $NaNH_2$. **alkyl-** R·C:O·NHR. Compounds obtained by treating an acid chloride or acid anhydride with an amine and sodium hydroxide. Cf. *anilide*. **keto-** A compound containing the radical —CO·$CONH_2$. **oxy-** A compound containing both the —OH and —$CONH_2$ groups. **thio-** A compound containing the —$CSNH_2$ group.

a. chloride. A chlorinated amide, R·CCl_2·NR_2 derived from an alkyl a., which changes readily to the imide chloride, R·C:NH·Cl. **a. group.** The formamyl group, —CO·NH_2 which confers weakly basic properties.

amidin. A transparent solution of starch in water.

amidines. Compounds containing the radical —C:NH·NH_2; as, formamidine, H·C(:NH)NH_2. Derived from the amides by replacement of O by the amido residue, >NH or >NR. Cf. *benzimidazole, phasotropy*. **di-** A compound containing 2 amidino groups; e.g., oxalamidine, NH_2(HN:)C—C(:NH)NH_2.

amidino. Guanyl. The radical NH_2·C(:NH)—.

amido. The —NH_2 radical when present in a compound with the —CO radical; otherwise termed *amino*. **a. acetophenone.** $C_6H_4NH_2$·COMe. Colorless crystals, m.106, soluble in water; a reagent in Ehrlich's diazo reaction. **a. aldehyde.** A compound containing both the amino and aldehyde radical; as, NH_2—CH_2—CHO, a. acetaldehyde. **a. benzoylformic acid.** Isatinic acid. **a. F acid.** β-Naphthylamine-7-sulfonic acid. **a. ketone.** A compound containing both the amino and keto groups; as, NH_2·CH_2COMe, amidoacetone. **a. mandelic acid.** Hydrindic acid. **a. mandelic acid lactame.** Dioxindole. **a. naphtholdisulfonic acid.** H acid. **a. oximes.** Amidoximes. **a. phosphoric acid.** Phosphamic acid. The compound, $PO(NH_2)O_2$. **a. pyrine.** Pyramidone. **a. thiazole.** $C_3H_4N_2S$ = 100.1. *α-methyl-* NH_2·C_4·HNS·Me. Colorless crystals, m.42. **a. triazulfole.** CH_2N_4S = 102.2. Amidotriazosulfole. *methyl-* CN_3S·NHMe. Colorless crystals, m.96. **a. urea.** Semicarbazide.

amidogen. Amido.

amidol. $(NH_2)_2C_6H_3OH$·HCl = 160.5. 3,4-Diaminophenol hydrochloride. Colorless crystals, slightly soluble in water; a photographic developer.

amidone. Me·$CH(NMe_2)$·CH_2·$C(Ph)_2$COMe = 295.20. Hoechst-10820. White solid, m.73, slightly soluble in water; an analgesic.

amidopyrine. $C_{13}H_{17}ON_3$ = 231.16. Dimethylaminoantipyrine, ampydin. White crystals, m.108, soluble in water; an analgesic (U.S.P.).

amidoxalyl. Oxamyl.

amidoxime. Oxamidine. A compound containing the amidoxime group, —C(:NOH)NH_2; e.g., methenyl- or formamidoxime, HC(NOH)NH_2.

Amidoxyl. Hydroxylamino. Trademark for a compound containing the amidoxyl group, —NHOH.

amidrazone. A compound containing the C_6H_5·NH·N:C(NH_2) radical; e.g., methyl-C_6H_5·NH·N:C(NH_2)·CH_3. See *hydrazidines*.

amigen. A protein hydrolysis product used in amino acid therapy.

Amilan. Trade name for a polyamide synthetic fiber.

Amilar. Trade name for a polyester synthetic fiber.

amination. The formation of an amine by: (1) reduction of a nitro compound, (2) reduction of a cyanide, (3) oxidation of an amide, (4) treating isocyanate with alkali. Cf. *amidation*.

amine. (1) See *amines*. (2) Suffix indicating an —NH_2 group.

amines. A group of compounds derived from ammonia by substituting organic radicals for the hydrogens; as, H_2NR, primary- (amines); $RHNR_2$, secondary- (imines); R_2NR, tertiary- (nitriles); R_4NOH, quaternary- (ammonium). Cf. *amino, amide, arsine, phosphine*. **di-** A. containing $2NH_2$ groups. **filming-** A. which form monomolecular films on hot surfaces, thereby promoting drop-type condensation; e.g., the use of *n*-octadecylamine inside drying cylinders. **metallic-** An amide (2), q.v. **neutralizing-** A. used to neutralize boiler-feed water, the excess being steam-volatile; as, cyclohexamine. **pressor-** A protein casein derivative having vasoconstrictory effects; as, tyramine. **primary-** Amino bases. Compounds in which 1 H is replaced by a radical; e.g., NH_2CH_3. **quaternary-** Tetraalkyl ammonium bases. Compounds derived from ammonium hydroxide containing 4 radicals; e.g., $N(CH_3)_4OH$. **secondary-** Imino bases. Compounds in which 2 H are replaced by a radical; e.g., $NH(CH_3)_2$. **tertiary-** Nitrile bases. Compounds in which 3 H are replaced by radicals; e.g., $N(CH_3)_3$. **thionyl-** A compound containing the —N:SO radical. **tri-** A compound containing 3 NH_2 groups. Cf. *semidines*.

aminic acid. Formic acid.

amino. The —NH_2 group indicated by the prefix *amino-* or suffix *amine**; as, aminomethane or methylamine. **a. acetal.** NH_2·CH_2·$CH(OEt)_2$ = 133.16. Colorless needles m.163, soluble in water. Cf. *glycinaldehyde*. **a. acetanilide.** NH_2·C_6H_4·NHCOMe = 150·14. Acetylphenylenediamine. Colorless needles, *ortho-* m.165, *meta-* m.90, *para-* m.160, slightly soluble in water. **a. acetic acid.** Glycine. **a. acetone.** NH_2CH_2COMe = 73.08. Colorless needles, m.188, (decomp.), soluble in water. **a. acetphenetidine.** See *phenocoll*. **a. acetophenone.** NH_2·C_6H_4·COMe = 135.1. *p*-Aminophenyl methyl ketone. Yellow powder, m.105, soluble in water. *ortho-* b.251. **a. acid.** See *amino acids*. **a. alcohols.** Alkamines. **a. anthraquinone.** See *anthraquinone*. **a. azobenzene.** Ph·N:$NC_6H_4NH_2$ = 197.2. Aniline yellow. Yellow needles, m.125, slightly soluble in water. An intermediate in the preparation of dyes and medicinals; an indicator changing at pH 2.5 from orange (acid) to yellow (alkaline). **a. azobenzene chlorhydrate.** $C_{12}H_{11}N_3$·HCl. Blue needles, slightly soluble in water; used in dye manufacture. **a. azobenzene-β-naphthol.** Sudan red III. **a. azonaphthalene.** $C_{10}H_7N$:$NC_{10}H_6NH_2$ = 297.25. *alpha-* Red needles, m.174, slightly soluble in alcohol. *beta-* Red needles, m.159. **a. azotoluene.** MeC_6H_4N:$NC_6H_3(NH_2)Me$. Red crystals, m.100, insoluble in water; used to treat ulcers. **a. azotoluene hydrochloride.** MeC_6H_4N:$NC_6H_3(NH_2)Me$·HCl. Colorless crystals, soluble in water. Its 4 isomeric forms are used in

N

N. (1) Abbreviation for newton. (2) Symbol for nitrogen. **N*.** Excited nitrogen atom. N_2. Nitrogen molecule. N_2^*. Excited nitrogen molecule. **NI.** Ionized nitrogen atom. **NII.** Doubly ionized nitrogen atom.

N. Symbol for: (1) normal, (2) normal solution, (3) Avogadro's number. ***N* electron.** The electron of the *N* shell or orbit; there are 8 in the third, 18 in the fourth, and 32 in the fifth period. ***N* orbit.** The fourth layer of energy level, in which electrons move around the proton in the dynamic atom. ***N* rays.** Nonluminous radiation whose wavelength is lower than that of visible light (Blondlet, 1903); emitted by a Welsbach burner, an X-ray tube, or the sun. They increase the luminosity of phosphorescent bodies. ***N* shell.** The fourth layer or energy level in which electrons oscillate in the static atom.

N-. In chemical names: the radical prefixed by N- is attached to the nitrogen atom.

n. (1) Any unknown number; as in C_nH_{2n}. (2) Symbol for index of refraction. (3) The number of molecules in 1 cc of gas. (4) Transport number.

n-. In chemical names: normal, as distinguished from isomeric, thus, *n*-butane.

ν. Greek nu. Symbol for frequency.

η. Greek eta. See *E*.

Na. Symbol for sodium (natrium).

naal oil. An essential oil distilled from naal grass, *Cymbopogon nervatus*, a Sudanese grass. Yellow liquid, d.0.954, insoluble in water. Chief constituents: *l*-limonene and perilla alcohol.

nabam. Official name (U.S., U.K.) for disodium ethylenebisdithiocarbamate; a fungicide.

Nacconol. Trademark for a group of surface-active sodium alkyl aryl sulfonates.

nacre. Mother of pearl. The hard, iridescent inside layer of oyster and other seashells.

nadi reagent. A reagent for cytochrome oxidase, e.g., in milk powders: dimethyl-*p*-phenylenediamine hydrochloride 0.02 and α-naphthol 0.1 gm are dissolved successively in 1 ml water. The blue color developed is a rough measure of the degree of oxidation.

nadorite. $PbClSbO_3$. An Algerian antimonate. Brown orthorhombic crystals.

naehrsalz. (German for nutrient salt.) A mixture of sodium and ammonium phosphates.

naftolens. $(C_3H_4)_n$. A group of unsaturated, vulcanizable hydrocarbons, b.200–380, from acid-tar by-products of mineral oil refining; extenders for rubber.

nagelschmidtite. 7–9 CaO, P_2O_5, 2–3 SiO_2. The principal phosphatic phase in open-hearth steel furnace slags.

nagyagite. Tellurium glance. Lead sulfotelluride which contains gold and antimony.

nahcolite. Native sodium bicarbonate.

Nailon. Trade name for a polyamide synthetic fiber.

nakrite. $Al_2O_3 \cdot 2SiO_2 \cdot H_2O$. A gray clay.

nalorphine hydrochloride. $C_{19}H_{21}O_3N \cdot HCl = 347.85$. *N*-Allylnormorphine hydrochloride. White crystals, darkening on exposure, m.262, soluble in water; respiratory stimulant and antidote to morphine (U.S.P., B.P.).

nandinine $C_{19}H_{19}O_3N = 309.2$. A diisoquinoline alkaloid from the root bark of nanten, *Nandina domestica* (Berberidaceae), Japan. Cf. *domesticine*.

nandrolone phenyl propionate. $C_{27}H_{34}O_3 = 406.30$. White crystals, m.97, insoluble in water; an androgen (B.P.).

nano. The unit of 0.000,000,001.

Nanogen. A pesticide standardized in nanograms per microlitre.

nanometer. nm. Millimicron (European usage).

nantokite. CuCl. A native cuprous chloride.

napalin. An aluminum soap of lauric and naphthenic or oleic acids. A thickening agent for gelled gasoline fuels for incendiary bombs.

napalite. C_6H_4. Red wax, m.42, from near Napa, Calif.

napelline. $C_{26}H_{35}O_7N(OH)_4 = 541.3$. Benzaconine. An alkaloid from aconite.

naphazoline nitrate. $C_{14}H_{14}N_2 \cdot HNO_3 = 273.32$. White, bitter crystals, m.168, soluble in water; a vasoconstrictor (B.P.).

naphsultam acid. $C_{10}H_7O_2NS = 205.1$. The ring compound, $O_2S\underline{\text{—NH—}}C_{10}H_6$. Cf. *naphsultone*.

naphsultone. $C_{10}H_6O_3S = 206.1$. Naphthosultone. Colorless crystals, m.154, soluble in water.

naphthalin. Naphthalene.

naphtha. (1) Oils of the C_nH_{2n+2} series, b.95–150, from the distillation of petroleum, coal tar, and shale oil. World production (1966), 20 million tons. (2) Gasoline. (3) A bitumen, q.v. **boghead-** Photogen. **coal tar-** Mainly benzene and its homologs. **petroleum-** Mainly paraffins and naphthenes distilled from crude oil. **shale-** Ligroin. It contains olefins and paraffins. **solvent-** A coal-tar distillate. **wood-** Mainly methyl alcohol and acetone, obtained by the distillation of wood; a solvent and denaturant for alcohol.

naphtha aceti. Ethyl acetate.

naphthacetol. 4-Acetamido-1-naphthol.

naphthacridine. $\underline{C_{10}H_6 \cdot N \cdot C_{10}H_6} \cdot CH = 279.1$. Dibenzacridine; 6 isomers. **di-** Dinaphthacridine. **fluoren-** Fluorenaphthacridine. **pheno-** Benzacridine.

naphthal. The radical $C_{10}H_7CH=$, from naphthoic aldehyde.

naphthaldehyde. $C_{10}H_7CHO = 156.1$. Naphthalene carbonal. **alpha-** Colorless liquid, b.291. **beta-** Colorless crystals, m.59.

4832

A S S I G N M E N T **Joint**

WHEREAS we, Hieronymus Andriessen and Frank Louwet, respectively have made a certain new and useful invention as set forth in an application for United States Letters Patent executed by us the 12th day of April 2000 for "Acid stable aqueous dispersion of metal particles and applications." filed on June 1, 2000 under Serial No. 09/584,489, the hereinafter named assignee being hereby authorized to insert the said serial number and filing date when ascertained;

AND WHEREAS, AGFA-GEVAERT, a naamloze vennootschap organised under the laws of Belgium, of Septestraat 27, B 2640 Mortsel, Belgium, is desirous of acquiring the entire right, title and interest in the United States in and to said invention and in and to any and all Letters Patent of the United States which may be obtained for said invention;

NOW THEREFORE, for good and valuable considerations, we do each of us hereby sell, assign, transfer and set over unto the said AGFA-GEVAERT, its legal representatives, successors, and assigns, the entire right, title and interest in and to all inventions whether joint or sole disclosed in said application for Letters Patent and in and to any all divisional, continuation or reissue applications that may be filed for United States Letters Patent for any of said inventions and in and to all United States Patents that may be granted on the foregoing application;

UPON SAID CONSIDERATIONS, we do hereby agree with the said assignee that we will not execute any writing or do any act whatsoever conflicting with these presents, and that we will, at any time upon request, without further or additional consideration but at the expense of the said assignee, execute such additional assignments and other writings and do such additional acts as said assignee may deem necessary or desirable to perfect the assignee's enjoyment of this grant, and render all necessary assistance in making application for and obtaining original, divisional, continuation or reissued Letters Patent of the United States on said invention, and in enforcing any rights or choses in action accruing as a result of such applications or patents, by giving testimony in any proceedings or transactions involving such applications or patents, and by executing preliminary statements and other affidavits, it being understood that the foregoing convenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives or assignor and assignee;

And we request the Commissioner of Patents to issue any Letters Patent of the United States which may be issued for said inventions to said AGFA-GEVAERT its legal representatives, successors or assigns as the sole owner of the entire right, title and interest in and to said patent and in the United States in and to the invention covered thereby.

Hieronymus Andriessen Frank Louwet

Hieronymus Andriessen Frank Louwet

Date: April 12, 2000

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